

REMARKS

Reconsideration and withdrawal of the rejections set forth in the Office action dated October 16, 2002 are respectfully requested. Applicants petition the Commissioner for a 1-month extension of time. A separate petition accompanies this amendment.

Attached is a separate page captioned "Version with Markings to Show Changes Made" with a marked-up version of the claims to show the changes made.

Applicants thank Examiners Wells and Padmanabhan for the courtesy of a telephone interview and for their helpful comments.

I. Amendments

Claims 26, 30, 34, 38 and 42 are amended to recite that the composition consists essentially of linoleic and linolenic acid in a weight ratio of 0.05-7.5, and wherein the composition contains flaxseed oil. Support for this amendment can be found on page 4, lines 21-22 and on page 4 lines 9-13.

Claim 30 is additionally amended to depend from claim 26. Claims 31-33, which depend from claim 30, are amended to conform with claim 30 in dependent form.

No new subject matter has been added by way of these amendments.

II. Rejections under 35 U.S.C. §102

Claims 26, 34, 37, and 42 were rejected under 35 U.S.C. §102(b) as allegedly anticipated by Leach (U.S. Patent No. 5,612,074).

This rejection is respectfully traversed for the following reasons.

A. The Invention

The present invention, as embodied in claims 26, 34, 38, and 42, relates to a composition (claim 26), an edible oil (claim 34), a dietary supplement (claim 38), and a food (claim 42) consisting essentially linoleic fatty acid and α -linolenic fatty acid in a weight ratio of 0.05-7.5 and containing flaxseed oil. Thus, the present claims require the following two elements:

1. a linoleic/linolenic fatty acid weight ratio of 0.05-7.5; and
2. flaxseed oil.

Ingredients added in a proportion that change the linoleic/linolenic weight ratio from the claimed range are specifically excluded by the claim language.

B. The Cited Art

LEACH describes a food bar having a ratio of dry ingredients to liquid ingredients of 3:1 (Col. 2, lines 63-67). On Col. 2, line 67 to Col. 4, line 17, Leach teaches that the dry ingredients must include:

- 38% dietary fiber (Col. 3, lines 1-2);
- 18% non-animal protein (Col. 3, lines 7-15);
- flavorings (Col. 3, lines 15-18);
- simple carbohydrate, sugar, complex carbohydrate (Col. 3, lines 18-24);
- lecithin (Col. 3, lines 25-27);
- 19% oil seeds (Col. 3, lines 34-46);
- chlorophyll (Col. 3, lines 61-64);
- pyridoxine (Col. 3, line 66-Col. 4, line 13); and
- magnesium (Col. 4, lines 14-18).

It is clear from the language used repeatedly in Col. 3 of Leach (e.g., "additional dry ingredients include"; "The dry ingredients of the present invention further include"; "Further dry ingredients include") that each of these dry ingredients in a necessary component of the food bar.

The liquid ingredients must include:

- a syrup sweetner (Col. 4, lines 19-24);
- vegetable oil containing linoleic acid (Col. 4, lines 24-30)
- vegetable oil containing linolenic acid (Col. 4, lines 30-34);
- liquid flavorings (Col. 4, lines 35-43).

On Col. 3, lines 40-47 Leach states

The oil seeds are selected so that when considered in aggregate with polyunsaturated linoleic acid and superunsaturated alpha-linolenic acid

provided by the mixture of liquid ingredients as will be described, the ratio of polyunsaturated linoleic acid to superunsaturated alpha-linolenic acid in the food bar of the present invention is approximately 3:1 by weight.

A similar teaching is found on Col. 5, lines 12-16:

Considering both the oil seeds of the mixture of dry ingredients and the vegetable oil of the mixture of liquid ingredients, polyunsaturated linoleic acid is present in the food bar in a ratio of about 3:1 by weight to superunsaturated alpha-linolenic acid (Col. 5, lines 12-16).

Thus, Leach teaches that the linoleic/linolenic ratio of the oil seeds in the dry ingredients and the vegetable oil in the liquid ingredients should be in a 3:1 ratio. This is in contradistinction to a teaching of an end product having a linoleic/linolenic ratio of 3:1, since it is clear that the resulting foodbar in Leach will not have a linoleic/linolenic ratio of 3:1. This is clear from the following:

1. Leach teaches that the dry ingredients must include at least one ingredient containing lecithin, such as soy granule (Col. 3, lines 24-26). Consistent with this is that all of the food bar examples provided in Leach include soy granule (Col. 5, line 51; Col. 6, line 31; Col. 7, line 18; Col. 8, line 2; Col. 8, line 53). Soy is a source of linoleic fatty acid¹. Thus, it is clear that addition of soy lecithin would have a material effect on the ratio linoleic/linolenic acids.

2. Leach nowhere teaches that the final foodbar composition should have a particular ratio of linoleic/linolenic acids. The exemplary food bars in Leach include numerous ingredients that effect the linoleic/linolenic acid ratio. This point is further illustrated in the discussion below.

C. Analysis

The standard for lack of novelty, that is, for anticipation, is one of strict identity. To anticipate a claim for a patent, a single prior source must contain all its essential elements. M.P.E.P. § 2131.

¹see attached pages from the following web sites visited on 2/11/03: www.wadsworth.com and www.dietobio.com

The claims, as amended recite a composition, edible oil, dietary supplement, or food consisting essentially of linoleic fatty acid and α -linolenic fatty acid in a weight ratio of 0.05-7.5 and containing flaxseed oil. As noted above, addition of an amount of a linolenic and/or linolenic acid containing ingredient that moves the linoleic/linolenic weight ratio outside of 0.05-7.5 is excluded.

According to MPEP § 2111.03, "[t]he transitional phrase 'consisting essentially of' limits the scope of a claim to the specified materials or steps 'and those that do not materially affect the basic and novel characteristic(s)' of the claimed invention."

Additionally, "[i]f an applicant contends that additional steps or materials in the prior art are excluded by the recitation of 'consisting essentially of,' applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant's invention." In the claims of the instant application the "basic and novel characteristic" of the invention is the weight ratio of linolenic fatty acid to α -linolenic fatty acid in the range of 0.05-7.5.

Applicants submit that the food bar taught by Leach contains numerous ingredients that materially effect the ratio of linoleic/linolenic fatty acid. For example, and as noted above, the food bar of Leach requires lecithin (soy). Soy is a known source of linolenic acid. In addition to soy, Leach teaches that the food bar must contain dietary fiber, non-animal protein, flavorings, and carbohydrates. The exemplary ingredients for dietary fiber include, *inter alia*, oatmeal (which contains 39.5% linoleic acid and 1% linolenic acid), cornmeal, wheat germ, barley, rye, date. Each of these are a source of linoleic and/or α -linolenic fatty acid² and addition of any one or more would materially alter the ratio of these fatty acids. Exemplary nonanimal proteins include soy, wheat germ (which contains 5.9% linoleic acid and 0.7% α -linolenic acid), almond, sesame seed, sunflower seed and oatmeal, each a good source of linoleic and/or α -linolenic fatty acid. Also, Fruitein³ and coriander seed⁴ are listed as exemplary flavorings and are sources of linoleic and/or α -linolenic fatty acid.

²see attached table from www.powerpak.com.

³Fruitein contains soy protein, which is a good source of linoleic acid and α -linolenic acid; and rice bran, oat bran and barley leaves, all of which are a source of linoleic acid. See attached table from www.naturesplus.com

⁴see attached table from www.florahealth.com

In summary, the food bar taught in Leach contains numerous ingredients that provide linoleic and/or α -linolenic fatty acid. The bar in Leach must contain lecithin (soy), in addition to a variety of other ingredients that all effect the ratio of linoleic acid to α -linolenic acid.

Nowhere does Leach teach that the final food bar composition must contain a linolenic and/or linolenic acid weight ratio of between 0.05-7.5. In fact, no consideration of the final linoleic and/or linolenic acid weight of the Leach food bar is given. The teaching in Leach with respect to linoleic and/or linolenic acid ratio is limited to a teaching of a 3:1 ratio for the oil seeds of the dry ingredients and the vegetable oil of the liquid ingredients (see Col. 3, lines 41-47 and Col. 5, lines 12-16 which are set forth above). Leach fails to consider the effect of lecithin or any of the other linoleic and/or linolenic acid-contributing ingredients on the final linoleic and/or linolenic acid ratio in the food bar.

This point is clearly illustrated by considering the first exemplary food bar disclosed in Leach on Col. 5, line 23 et seq. Using the preferred size of 62 grams (Col. 5, lines 23-26) and a ratio of dry ingredients to liquid ingredients of 3:1 (Col. 2, lines 63-67), the linoleic fatty acid to α -linolenic fatty acid ratio was determined for the major ingredients of the food bar. In the table below, the percentages of linoleic fatty acid and α -linolenic fatty acid percentages in the foods were obtained at various internet sites.

Ingredient in Leach's Food Bar (Col. 5, lines 42 et seq.)	% linoleic	linoleic (g)	% linolenic	linolenic (g)
oatmeal	39.5	4.41	1	0.11
date	negligible	0	negligible	0
fruitein	*		*	
whey	**		**	
hulled sesame seed	35-50	1.14-1.63	1	0.03
sunflower seed	50-60	1.63-1.95	0.1-0.5	0.003-0.02
wheat germ	5.9	0.16	0.7	0.02
flax seed	7	0.16	22	0.51
almond	15	0.28	-	0
dessicated coconut	0.65-1.69	0.01-0.03	-	0
coriander seed	-	0	0.14-0.38	0.002-0.005
soy	0.4	0.006	2.1	0.03
honey	-	0	-	0
sorghum syrup	-	0	-	0
brown rice syrup	-	0	-	0
hemp oil	57	0.8	19	0.27
TOTAL		8.6-9.43		0.98-1

*Fruitein contains isolate soy protein, which has a ratio of linoleic acid:α-linolenic acid of 0.19, and rice bran, oat bran, and barley leaves, all of which contain linoleic acid.

**Whey contains conjugated linoleic acid.

As seen from the table above, the food bar of Leach has a linoleic fatty acid to α-linolenic fatty acid weight ratio of at least 8.6, which is well outside of the 0.05-7.5 range recited in the claims of the present invention.

Since Leach fails to teach a composition that consists essentially of linoleic fatty acid and α-linolenic fatty acid in a weight ratio of 0.05-7.5, the standard for novelty has not been satisfied and withdrawal of the rejection under 35 U.S.C. §102 is respectfully requested.

III. Rejections under 35 U.S.C. §103

Claims 27-33, 35-36, 38-41 and 43-45 were rejected under 35 U.S.C. §103 as allegedly obvious over Leach in view of Erasmus *et al.* (U.S. Patent No. 5,656,312) and Hunter *et al.* (U.S. Patent No. 4,863,753) in further view of Igarashi (U.S. Patent No. 6,159,507).

This rejection is respectfully traversed for the following reason.

A. The Invention

The present invention is described above.

B. The Cited Art

LEACH is described above.

ERASMUS ET AL. describe a composition and method for preparing a food supplement. The supplement includes at least 70% by weight of an oil seed constituent which may be flax seed or perilla seed.

HUNTER ET AL. disclose a peanut butter with reduced calories through reduction of the amount of peanut oil and total oil. This is achieved by replacement of at least a portion of the peanut oil with triglycerides containing medium chain fatty acids. The remaining fatty acids may be long chain fatty acids such as linoleic and linolenic acid. It is preferred that peanut butter contain from about 5% to about 25% linoleic acid and up to about 15% linolenic acid. The peanut butter further generally contains up to about 5% of a stabilizer consisting of an oil such as rapeseed oil. It is disclosed that linolenic oil is found in linseed oil and perilla oil.

IGARASHI describes a "balance modifier" that can be added to food in order to adjust the *in vivo* ratio of omega-6 unsaturated fatty acids to omega-3 unsaturated fatty acids.

C. Analysis

As stated in M.P.E.P. § 2143, "to establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the prior art references (or references when combined) must teach or suggest all the claim limitations."

As noted above, Leach fails to teach a composition consisting essentially of linoleic fatty acid and α -linolenic fatty acid in a weight ratio of 0.05-7.5 and containing flaxseed oil. The combined and/or separate teachings of Erasmus *et al.*, Hunter *et al.* and Igarashi *et al.* do not make up for this deficiency.

Accordingly, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. §103.

IV. Miscellaneous

During the interview, the Examiner raised the concern that the dependent claims which recite additional ingredients selected from perilla oil and rapeseed oil (claims 27, 35, 39, and 43) fall outside of the claimed subject matter. Applicants wish to address this concern.

The claims as amended recite a composition, edible oil, dietary supplement, or food consisting essentially of linoleic fatty acid and α -linolenic fatty acid in a weight ratio of 0.05-7.5 and containing flaxseed. This claim captures Applicants' finding that compositions having a weight ratio of these fatty acids in this range improve cognitive ability. The improvement is not observed for compositions outside this range.

As noted above, the transitional phrase "consisting essentially of" precludes addition of ingredients which "materially change the characteristics of applicant's invention." Thus, the claims preclude an amount of an ingredient that would alter the ratio of linoleic fatty acid to α -linolenic fatty acid to fall outside the claimed range of 0.05-7.5. Addition of, for example, perilla oil and/or rapeseed oil, in an amount that maintains the composition within the claimed ratio does not violate the scope of the claim.

V. Conclusion

In view of the foregoing, Applicants submit that the claims pending in the application are in condition for allowance. A Notice of Allowance is therefore respectfully requested.

If in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is encouraged to call the undersigned at (650) 838-4410.

Respectfully submitted,



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Application No. 09/499,693

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the claims:

26. (Twice Amended) An unsaturated fatty acid composition [comprising flaxseed oil, wherein the] consisting essentially of linoleic fatty acid (n-6, 18:2) and α -linolenic fatty (n-3, 18:3) in a linoleic to α -linolenic weight ratio of [linoleic fatty acid (n-6, 18:2) to α -linolenic fatty (n-3, 18:3) acid in said composition is] 0.05-7.5, and wherein said composition contains flaxseed oil.

30. (Twice Amended) The composition of claim 26, wherein said composition is in the form of [A]a capsule [comprising an unsaturated fatty acid composition comprising flaxseed oil, wherein the weight ratio of linoleic fatty acid n-6, 18:2) to α -linolenic fatty acid (n-3, 18:3) in said composition is 0.05-7.5].

31. (Amended) The [capsule] composition of claim 30, wherein the unsaturated fatty composition further comprises rapeseed oil and perilla oil.

32. (Amended) The [capsule] composition of claim 30, wherein the weight ratio of said linoleic fatty acid to said α -linolenic fatty acid [in said composition] is 0.05-2.0.

33. (Amended) The [capsule] composition of claim 31, wherein the weight ratio of said linoleic fatty acid to said α -linolenic fatty acid [in said composition] is 0.05-2.0.

34. (Twice Amended) An edible oil [comprising flaxseed oil, wherein the] consisting essentially of linoleic fatty acid (n-6, 18:2) and α -linolenic fatty (n-3, 18:3) in a linoleic to α -linolenic weight ratio of [linoleic fatty acid (n-6, 18:2) to α -linolenic fatty acid (n-3, 18:3) in said oil is] 0.05-7.55, and wherein said oil contains flaxseed oil.

38. (Twice Amended) A dietary supplement [comprising flaxseed oil, wherein the] consisting essentially of linoleic fatty acid (n-6, 18:2) and α -linolenic fatty (n-3, 18:3) in a linoleic to α -linolenic weight ratio of [linoleic fatty acid (n-6, 18:2) to α -linolenic fatty acid (n-3, 18:3) in said supplement is] 0.05-7.5, and wherein said supplement contains flaxseed oil.

42. (Twice Amended) A food [comprising flaxseed oil, wherein the] consisting essentially of linoleic fatty acid (n-6, 18:2) and α -linolenic fatty (n-3, 18:3) in a linoleic to α -linolenic weight ratio of [linoleic fatty acid (n-6, 18:2) to α -linolenic fatty acid (n-3, 18:3) in said foodstuff is] 0.05-7.5, and wherein said food contains flaxseed oil.

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Nutrition News

Alpha-linolenic Acid

Alpha-linolenic acid (ALA) is the parent compound of the omega-3 fatty acid family. It is required in the diet because humans cannot manufacture it. (The other essential fatty acid for humans is linoleic acid, the parent compound of the omega-6 family. Arachidonic acid, a metabolite of linoleic acid, is now believed to be essential only when there is a deficiency of linoleic acid.) Studies in laboratory animals suggest that about 85% of ingested ALA undergoes beta-oxidation to produce energy and the remainder is elongated to form the long-chain metabolites, eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA).

The richest source of ALA in the North American diet is flaxseed. ALA constitutes about 57% of the total fatty acids in flaxseed. ALA is also found mainly in the fats and oils of canola, wheat germ and soybeans; currant seeds; and nuts such as walnuts. Fish contain only small amounts of ALA, although some species of fish, particularly fatty marine fish such as salmon, herring, and mackerel, are rich in EPA and DHA. Consumers who want to increase their ALA intake can do any or all of the following:

- buy baked goods with added flaxseed at supermarkets.
- sprinkle whole or milled flaxseed on cereal, yogurt, and salads.
- use canola oil in cooking and baking at home.
- add wheat germ to homemade muffins and breads.
- buy omega-3 enriched eggs in the daily case.

Omega-3 enriched eggs are derived from hens fed flaxseed. One large omega-3 enriched egg contains about 7-12 times more omega-3 fatty acids than a regular large egg and provides nearly half the optimal ALA intake level. Other omega-3 enriched foods that may be available in supermarkets in the future are pork loin, bacon, milk and fish, all derived from livestock and fish fed flaxseed.

Recent epidemiologic research suggests that ALA may have unique antithrombotic and antiarrhythmic effects that differ from those of EPA and DHA and may help protect against myocardial infarction and stroke. It may also reduce the symptoms and inflammation associated with autoimmune diseases such as rheumatoid arthritis.

Information about essential fatty acids, including ALA, can be found in *Understanding Nutrition*, 7th Edition, by Eleanor Noss Whitney and Sharon Rady Rolfes.

The Flax Council of Canada has published on the Internet a review of the metabolism, biochemistry and health effects of ALA. General information about essential fatty acids is provided by the American Heart Association. To search for scientific articles on ALA, EPA and DHA, access the free Internet MEDLINE service.

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Sources

Linoleic Acid (Omega-6 family)

Good sources :

- Oils from sunflower, safflower, corn, sesame, poppy, wheat germ, soybean and walnut
- Wheat germ
- Vegetables
- Sunflower, sesame, poppy seeds, pumpkin seeds and walnuts
- Grains
- Legumes

Alpha Linolenic Acid (Omega-3 family)

Good sources :

- Oils from walnut, rapeseed, wheat germ, flax seed and soybean
- Cold water fish
- Flaxseeds (linseeds)
- Mustard and pumpkin seeds
- Dark green vegetables
- Soybeans
- Walnuts
- Wheat germ
- Some sea foods

Oils which contain high level of alpha linolenic acid have to be used for dressing. It is better not to cook them otherwise you will destroy the EFA.



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Palmitoleic	16:1 07
Oleic	18:1 09
Vaccenic	18:1 07
Erucic	22:1 09
Mead's	20:3 09

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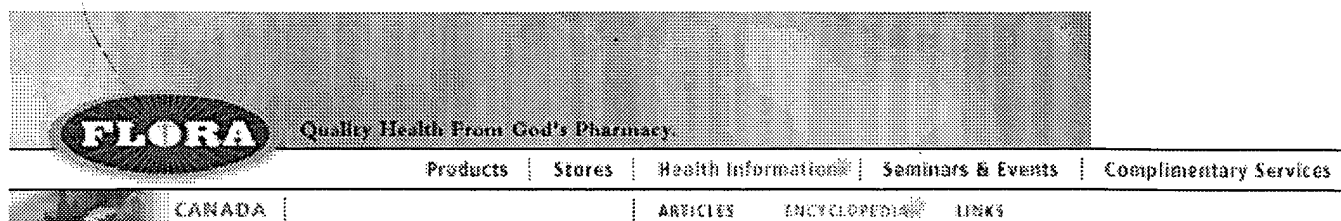
TABLE 2. Fatty Acid Composition (g Fatty Acid/100 g) for Various Plant Oils, Vegetables, Fruits, and Nuts and the Ratio of 18:2~~06~~ to 18:3~~03~~²⁰

Food	LA 18:2 06	LNA 18:3 03	Ratio	Food	LA 18:2 06	LNA 18:3 03
Oils				Vegetables/Fruits		
Almond	22.3	0.1	223	Avocado	1.9	0.1
Canola	24	10	2.4	Bean, common	0.3	0.6
Coconut	1.3	0	—	Bean, lima	0.5	0.2
Corn	52	1	52	Bean, navy	0.2	0.3
Flax	12.7	57	0.22	Bean, pinto	0.2	0.3
Hazelnut	15.0	0	—	Broccoli	0.03	0.1
Olive	7.3	0.6	12.1	Cauliflower	0	0.01
Pistachio nut	17.8	0.3	59.3	Kale	0.1	0.2
Pumpkin seed	42	0	—	Lettuce, butterhead	0	0.1
Rice bran	33.4	1.6	20.9	Lettuce, red leaf	0	0.03
Safflower	77	0.2	385	Mustard	0	0.04
Sesame	45	0.6	75	Peas	0.2	0.2
Soybean	51.1	6.8	7.5	Purslane	0.09	0.4
Soybean				Raspberries	0.2	0.1
(hydrogenated)	19.4	1.5	12.9	Soybean	0.4	2.1
Sunflower	69	0.1	690	Soybean, green	0.6	3.2
Walnut	52.9	10.4	5.1	Spinach	0.1	0.9
Walnut, germ	54.8	6.9	7.9	Strawberries	0.1	0.1
Cereal Grains				Nuts and Seeds		
Barley, bran	2.4	0.3	8	Beechnuts	18.4	1.7
Corn, germ	17.7	0.3	59	Butternut	34.0	8.7
Oats, germ	11.0	1.4	7.9	Chia seeds	3.4	3.9
Rice, germ	6.4	0.2	32	Hickory	20.9	1.0
Wheat, bran	2.2	0.2	11	Walnut, black	34.2	3.3
Wheat, germ	5.9	0.7	8.4	Walnut, english	32.3	6.8
Wheat, hard red	1.1	0.1	11			

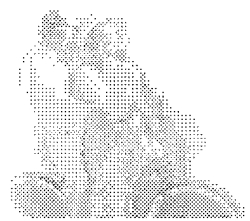
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TABLE 3. The Differing Characteristics of Omega 3 and Omega 6¹⁴⁶

Essential Fatty Acid Deficiencies



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Coriander Seed

- [Scientific Names](#)
- [Forms](#)
- [Traditional Usage](#)
- [Overview](#)
- [Active Ingredients](#)
- [Suggested Amount](#)
- [Drug Interactions](#)
- [Contraindications](#)
- [Side Effects](#)
- [References](#)

Scientific Names:

Coriandrum sativum L. [Fam. Apiaceae]

Forms:

Dried whole coriander seed; coriander seed oil extract

Traditional Usage:

- Amenorrhea
- Antimicrobial
- Antioxidant
- Bone and Joint Conditions (externally)
- Breathing Problems
- Cramps (stomach)

- Diarrhea
- Dyspepsia
- Flatulence
- Gastritis (sub-acid)
- Gastrointestinal Upsets
- Indigestion
- Stomachaches
- Vermifuge

 [Top](#)

Overview:

The seed of coriander, *Coriandrum sativum* L. [Fam. Apiaceae], is commonly used as a food and spice around the world, especially in India where it is particularly valued for its healing powers as a digestive herb. Coriander seed has been used as a medicine for thousands of years including in ancient Greece, Rome, China and India, and the same digestive indications are recorded in each tradition. Coriander seed has several medicinal virtues and is listed in the German Commission E Monographs for alleviating digestive complaints and stimulating appetite. The German Pharmacopoeia also recognizes coriander seed as a source of essential oils that can effectively treat mild stomach cramps, flatulence and colicky symptoms in the intestinal tract. The essential oil is considered spasmolytic, stomachic (stimulates digestive juices and aids digestion), carminative (reduces gas and bloating) and also has antibacterial and antifungal activity. The seed is recommended as a taste enhancer and can counteract the mild cramps accompanying the use of laxatives. Coriander seeds contain approximately 0.4-1.7% linalool (a compound with documented antiseptic, antibacterial, antiviral, antifungal and spasmolytic activity) and 0.8-1.4% alpha-pinene (an antimicrobial compound that also helps to loosen bronchial secretions and is classified as an expectorant). Dr. James Duke reports that the seeds contain five different compounds that can help to ease people with breathing difficulties. Coriander seed tea is also recognized by herbalists to prevent hormonal imbalances and treat menstrual difficulties in young women including amenorrhea. Folk use of coriander seed includes use against intestinal worms and as a component of compresses for sore and aching joints; but these uses have not been validated scientifically. Coriander has been reported to have strong lipid lowering effects and in one recent study was shown to play a protective role against the deleterious effects of lipid metabolism in experimental colon abnormal growths.

 [Top](#)

Active Ingredients:

Coriander Seeds contain: Approximately 2-2.6% essential oil consisting of up to 55-74% of linalool, and the remainder including other monoterpenes such as alpha and beta pinene, limonene, gamma-terpinene, p-cymene; anethole; geraniol and camphor. The characteristic scent of the unripe seeds and the mature herb is trans-Tridec-2-en-1-al. The seeds also contain: 11-21% fixed oil including 4-17% oleic acid, 4-11% petroselinic acid, and 1.3-1.8% linolenic fatty acids; 3-ketoacyl-ACP synthase; coumarins; 5- and 8-methoxypsoralen and imperatorin; mucilage; and many ubiquitous compounds such as flavonoids; tannins; approximately 20% sugars; 11-17% protein; and starch.

 [Top](#)

Suggested Amount:

The daily dose of coriander seed is 3g of the dried seed or crushed seeds taken directly or as an infusion. To prepare an infusion: Pour approximately 150ml of boiling water over 1-2 teaspoonfuls of crushed and powdered coriander seed, cover and after about 10-15 minutes pass through a tea strainer. Unless otherwise prescribed, a moderately warm cup of the freshly prepared infusion is drunk between meals two to four times a day. Tinctures (1g coriander seed per 5ml tincture abbreviated as 1:5) and fluidextracts (1:1) of coriander seed are taken corresponding to the above daily dosage.

 [Top](#)

Drug Interactions:

One author reports interactions of coriander seed products with diabetes medicines (hypoglycemics, examples: insulin, Glucophage(R) metformin, DiaBeta (R) Glynase(R) glyburide, Glucotrol(R) glipizide).

 [Top](#)

Contraindications:

None known

 [Top](#)

Side Effects:

Allergic reactions are possible in susceptible persons. The plant and seed also contain several photoactive compounds and therefore extracts should not be used in quantity or applied externally before going in the sun or getting prolonged exposure to high UV levels. High dosages of coriander seed (above the recommended therapeutic dosages and culinary levels used in Indian

cooking) for a prolonged duration are reported by some authors to cause liver damage. Side effects associated with overdose include: Breathing problems or tightness in your throat or chest, chest pain, skin hives, rash, or itchy or swollen skin. Coriander is also reported to lower blood sugar and therefore may interfere with existing hypo- or hyperglycemic therapies.

 [Top](#)

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
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 [Top](#)

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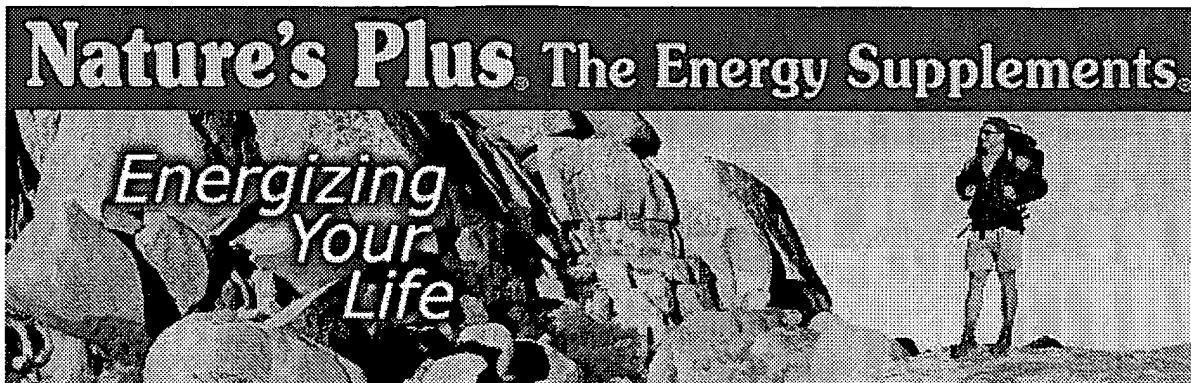
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One scoop contains

Vitamin A	100%
Vitamin C	100%
Vitamin D	100%
Vitamin E	100%
Thiamine	100%
Riboflavin	100%
Niacin	100%
Vitamin B6	100%
Folate (as folic acid)	100%
Vitamin B12	100%
Biotin	100%
Pantothenic Acid	100%
Calcium	35%

Iron	25%
Phosphorus	25%
Biotin	100%
Iodine	100%
Magnesium	35%
Zinc	100%
Selenium	30%
Manganese	140%
Chromium	15%
Molybdenum	15%
Sodium	120 mg
Potassium	110 mg
Choline Bitartrate	50 mg
Inositol	50 mg
Citrus Bioflavonoid Complex	25 mg

Additional Ingredients

fructose, isolate soy protein, di-calcium phosphate, orange juice crystals, citric acid, magnesium oxide, potassium citrate, natural vanilla flavor, natural banana flavor, choline bitartrate, natural orange flavor, vitamin C, vitamin E acetate, bromelain, inositol, papain, biotin, citrus bioflavonoids, GTF chromium, amylase, niacinamide, vitamin A palmitate, zinc oxide, manganese sulfate, ferrous fumarate, pantothenic acid, lipase, cellulase, schizandra, rice bran, black currant seed, oat bran, Korean ginseng, acerola cherry, papaya, astragalus, apple pectin, spirulina, Spanish bee pollen, pineapple, young barley leaves, ligustrum, carrot, kelp, lecithin, pyridoxine HCl, riboflavin, thiamine HCl, vitamin B12, vitamin D, folic acid, potassium iodide, sodium selenate, sodium molybdate.

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